

WHAT IS CLAIMED IS:

SUB A²

1. A method for demultiplexing non-intensity modulated wavelength division multiplexed (WDM) signals, comprising:

5 receiving a wavelength division multiplexed (WDM) signal having a plurality of non-intensity modulated optical information signals; and

converting a plurality of the non-intensity modulated optical information signals to intensity modulated signals while the plurality of non-intensity modulated optical information signals are multiplexed in at least a portion of the WDM signal.

2. The method of Claim 1, further comprising converting the plurality of non-intensity modulated optical information signals to intensity modulated signals using a asymmetric Mach-Zender interferometer.

3. The method of Claim 2, wherein the asymmetric Mach-Zender interferometer comprises (a free spectral range coinciding with an integer multiple of a channel spacing of the WDM signal.)

4. The method of Claim 2, wherein the Mach-Zender interferometer comprises (a free spectral range coinciding with a channel spacing of the WDM signal.)

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5. The method of Claim 1, further comprising converting all non-intensity modulated optical information signals of the WDM signal to intensity modulated signals simultaneously prior to first stage demultiplexing.

6. The method of Claim 1, wherein the plurality of non-intensity modulated optical information signals comprise a set of partially demultiplexed signals from the WDM signal.

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7. The method of Claim 1, wherein the WDM signal includes a minimum channel spacing comprising a multiple of a symbol rate of the WDM signal within 0.4 to 0.6 of an integer.

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8. The method of Claim 7, wherein the minimal channel spacing comprising a multiple of the symbol rate within substantially 0.5 of the integer.

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9. The method of Claim 1, further comprising:
separating the WDM signal into a plurality of partially demultiplexed signals using at least one wavelength interleaver; and

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converting non-intensity modulated optical information signals in each set simultaneously using an asymmetric Mach-Zender interferometer.

10. A system for demultiplexing non-intensity modulated wavelength division multiplexed (WDM) signals, comprising:

means for receiving a wavelength division
5 multiplexed (WDM) signal having a plurality of non-intensity modulated optical information signals; and

means for converting a plurality of the non-intensity modulated optical information signals to intensity modulated signals while the plurality of non-intensity modulated optical information signals are
10 multiplexed in at least a portion of the WDM signal.

11. The system of Claim 10, further comprising means for converting the plurality of non-intensity modulated optical information signals to intensity modulated signals using a asymmetric Mach-Zender interferometer.
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12. The system of Claim 11, wherein the asymmetric Mach-Zender interferometer comprises a free spectral range coinciding with an integer multiple of a channel spacing of the WDM signal.
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13. The system of Claim 11, wherein the Mach-Zender interferometer comprises a free spectral range coinciding with a channel spacing of the WDM signal.
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Sub A² 14. The system of Claim 10, further comprising means for converting all non-intensity modulated optical information signals of the WDM signal to intensity modulated signals simultaneously prior to first stage demultiplexing.
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15. The system of Claim 10, wherein the plurality of non-intensity modulated optical information signals comprise a set of partially demultiplexed signals from the WDM signal.

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16. The system of Claim 10, wherein the WDM signal includes a minimum channel spacing comprising a multiple of a symbol rate of the WDM signal within 0.4 to 0.6 of an integer.

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17. The system of Claim 16, wherein the minimal channel spacing comprising a multiple of the symbol rate within substantially 0.5 of the integer.

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18. The system of Claim 10, further comprising:
means for separating the WDM signal into a plurality of partially demultiplexed signals using at least one wavelength interleaver; and

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means for converting non-intensity modulated optical information signals in each set simultaneously using an asymmetric Mach-Zender interferometer.

19. A demultiplexer for an optical receiver,
comprising:

5 a format converter operable to receive a wavelength
division multiplexed (WDM) signal having a plurality of
non-intensity modulated optical information signals and
to convert the non-intensity modulated optical
information signals to intensity modulated optical
information signals while multiplexed in the WDM signal;
and

10 a plurality of demultiplexing elements each operable
to separate a received set of intensity modulated optical
information signals into a plurality of signals each
having at least one intensity modulated optical
information signal.

15 20. The demultiplexer of Claim 19, wherein the
format converter comprises an asymmetric Mach-Zender
interferometer.

20 ^{Sub A²} 21. The demultiplexer of Claim 20, wherein the
demultiplex elements comprise Mach-Zender
interferometers.

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